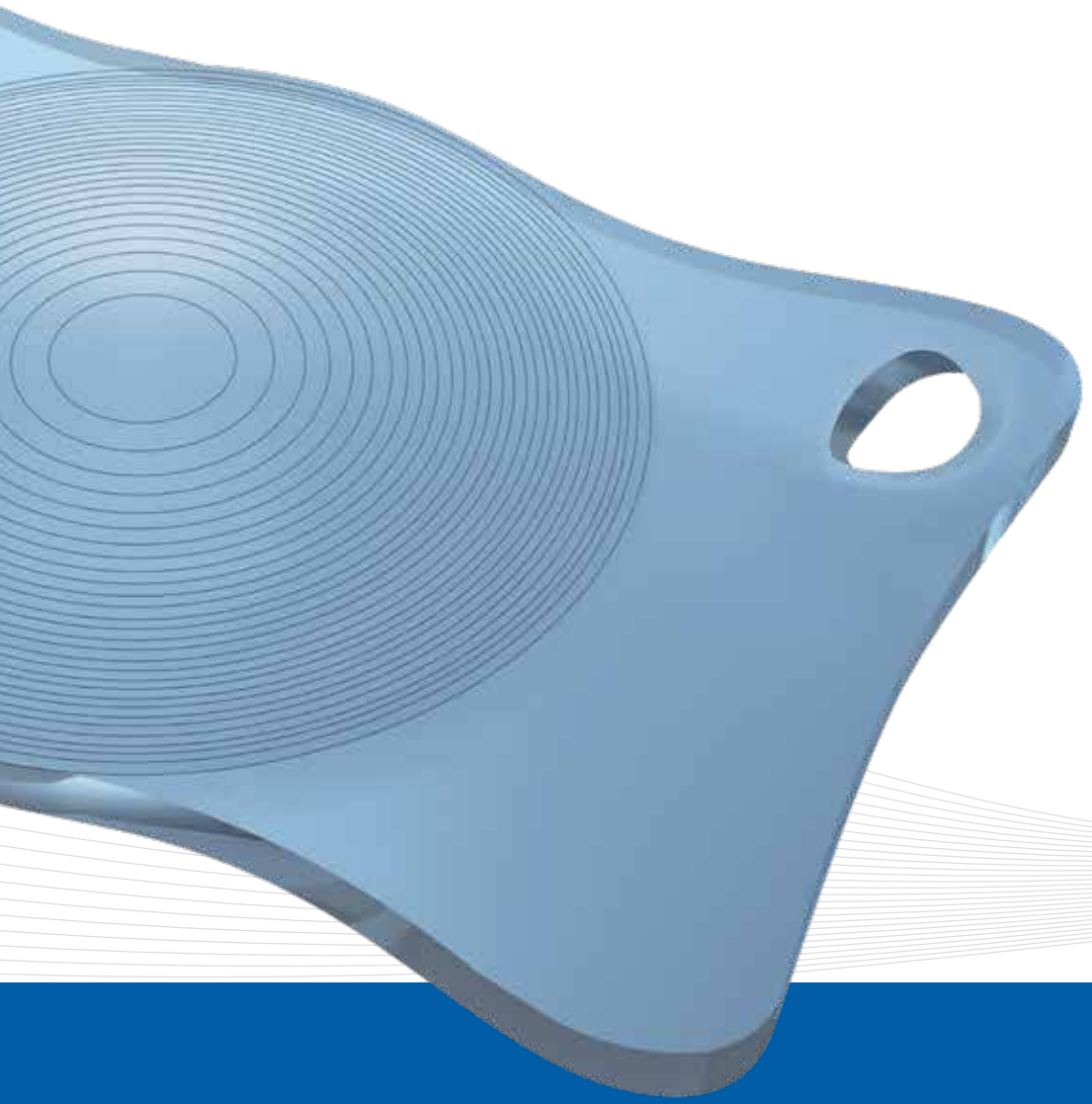


# Acriva UD Reviol

Multifocal Intraocular Lens

Multifocal

VSY BIOTECHNOLOGY

# Active-Diffractive Optic is Different

## Do you know why?

| | |
|---|---|
| Maximum Light Transmission | Better Visual Quality |
| Pupil-independent Light Distribution | Increased Contrast Sensitivity |
| 3.75D Near Addition | Improved Intermediate Vision |
| Visual Performance After Implantation | Enhanced Visual Acuity for All Distances |
| Ring Transition Zones | Limited Photic Phenomena |
| Exceptional Optic Engineering | Square Edge and Aspheric Design |

# Discover the Difference

## 1 Maximum Light Transmission

### Better Visual Quality

Not all diffractive IOLs are the same. **Reviol's** unique Active-Diffractive zone design provides excellent light transmission at maximum range under any light condition.

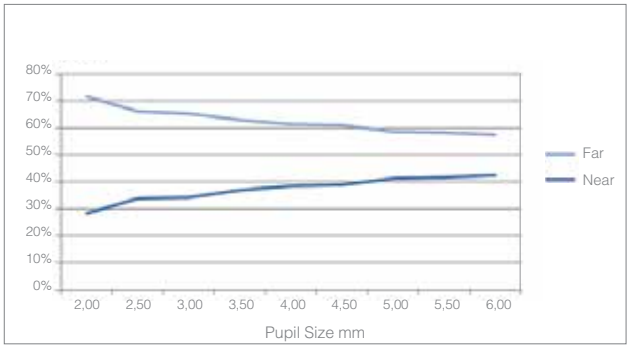
Diffractive Zones of Reviol

The performance of multifocal IOLs depends on their establishment of diffractive zones. The number, height, interval, and width of the rings affect patients' total visual outcomes under mesopic conditions. Diffractive multifocal IOL engineering is based on balanced light energy between foci. Narrow rings increase the near addition. Conversely, higher steps enable transfer of more energy to near focus[1].

## 2 Pupil-Independent Light Distribution

### Increased Contrast Sensitivity

**Reviol's** Active-Diffractive optic preserves a better balance of 60% far and 40% near focus at 6mm pupil aperture. Balanced light distribution under any light condition increases contrast sensitivity.




Reviol's Light Distribution

Decreased contrast sensitivity in mesopic conditions has been reported in pupil-dependent multifocal IOLs[2]. A light distribution change of 90% for far focus and 10% for near focus at 6 mm pupil diameter explains this phenomenon. Lower energy transfer to near focus causes patients' poor visual acuity[3].

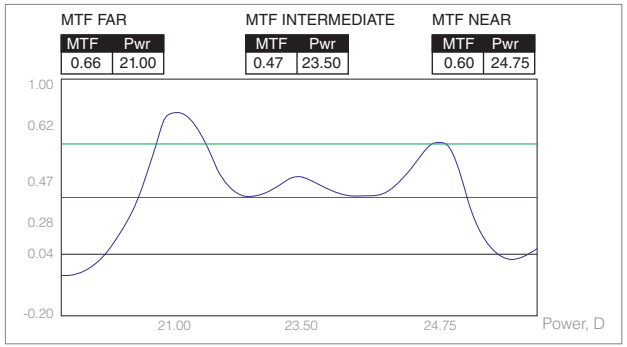
References
1- Portney V., Light distribution in diffractive multifocal optics and its optimization. J Cataract Refract Surg 2011; 37:2053-2059.
2- de Vries NE, Nuijts RM. Multifocal intraocular lenses in cataract surgery: literature review of benefits and side effects. J Cataract Refract Surg. 2013 Feb;39(2):268-78.
3- Petermeier K, Messias A, Gekeler F, Szurman P. Effect of +3.00 diopter and +4.00 diopter additions in multifocal intraocular lenses on defocus profiles, patient satisfaction, and contrast sensitivity. J Cataract Refract Surg. 2011 Apr;37(4):720-6.

# Experience the Difference

## 3 3.75D Near Addition

### Improved Intermediate Vision

3.75D near addition in **Reviol's** Active-Diffractive Optic has the appropriate balance to provide better intermediate visual acuity[4].

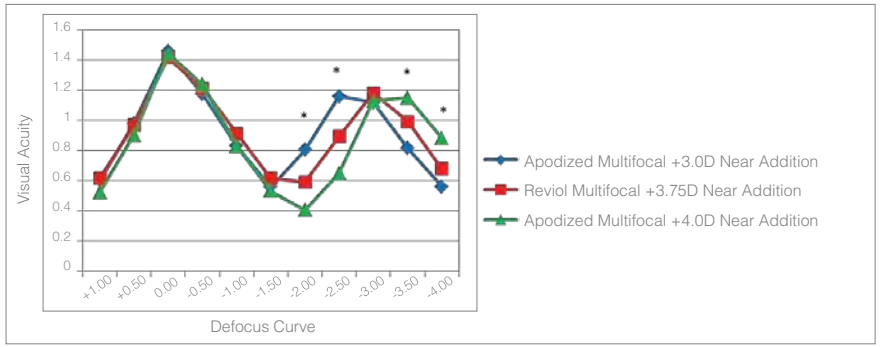



Near addition is crucial in energy distribution through near to distance focus. Insufficient near addition results in inadequate disparity between foci, causing blurred vision at intermediate focus. Excessive near addition eliminates focus overlapping and provides sharp near and distance vision. On the other hand reduced visual performance may result, causing difficulties in patient adaptation[3].

## 4 Visual Performance After Implantation

### Enhanced Visual Acuity for All Distances

As demonstrated in the defocus curve graphic, **Reviol's** Active-Diffractive optic offers better intermediate vision than Apodized +4.0D multifocal IOLs, and better near visual performance than Apodized +3.0D multifocal IOLs[5].




*There were statistically significant differences in near and intermediate visual acuities among three groups. ($P < 0.05$)

The defocus curve was determined in a comparative study on 130 eyes of 87 patients. The study compared performances of Reviol +3.75D near addition, an apodized multifocal IOL +3.0D near addition, and an apodized multifocal IOL +4.0D near addition.[5]

References
3- Petermeier K, Messias A, Gekeler F, Szurman P. Effect of +3.00 diopter and +4.00 diopter additions in multifocal intraocular lenses on defocus profiles, patient satisfaction, and contrast sensitivity. J Cataract Refract Surg. 2011 Apr;37(4):720-6.
4- Can I., Ceran BB., Soyugelen G., Takmaz T. Comparison of clinical outcomes with 2 small-incision diffractive multifocal intraocular lenses. Journal of Cataract & Refractive Surgery 2012 Vol 38 No1
5- Data on file.

# See the Difference

## 5 Ring Transition Zones

### Limited Photic Phenomena

**Reviol's** progression zones are rounded in a unique manufacturing process.

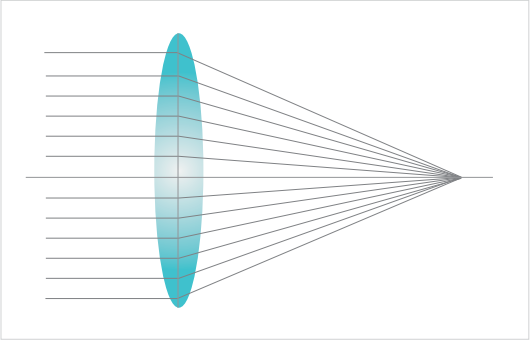
Photic Phenomena — Improved Vision

Sharper transition zones interact with photic phenomena as light refracts wildly.

## 6 Exceptional Optic Engineering

### Aspheric Design

Ultra Definition optic design corrects spherical aberrations coming from cornea. **Reviol** IOLs have a slight negative asphericity which neutralizes positive spherical aberration of the cornea while preserving the depth of focus.



Ultra Definition Aspheric Optic

Corneal topography measurements on 71 cataract patients have shown that the average spherical aberration of the human cornea is +0.27 microns. With spheric IOL implantation, total ocular spheric aberration becomes increasingly positive. Poor contrast sensitivity has been reported in many cataract patients after implantation of spheric IOLs[6, 7].

### Advantages of Ultra Definition Design

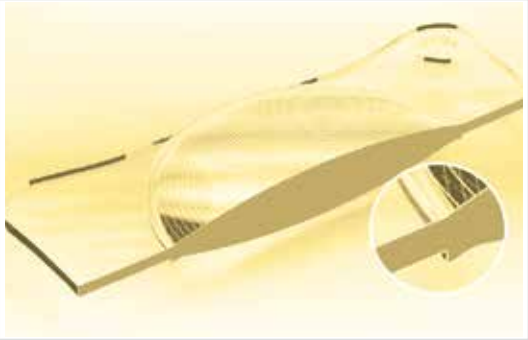
- Improved contrasts under mesopic conditions
- Preserved depth of focus
- Less sensitive to decentration

References
6- Holladay JT, Piers PA, Korayni G, et al. A new intraocular lens design to reduce spherical aberration of pseudophakic eyes. J Refract Surg. 2002, 18 (6):683-691.
7- Belluci R, Morselli S, Piers P. Comparison of wavefront aberrations and optical quality of eyes implanted with five different intraocular lenses. J Refract Surg. 2004 Jul-Aug;20(4):297-306.

# 7 360° All Enhanced Square Edge

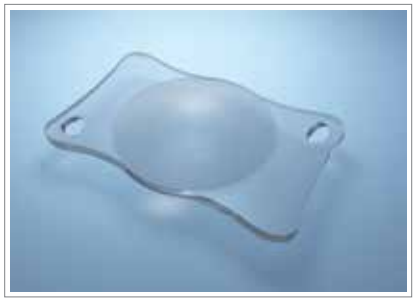
## Real PCO Barrier

**Reviol's** innovative edge design greatly reduces PCO risks by creating a geometric and mechanical barrier against cell proliferation.



Recent studies conclude that the most important IOL-related factor in preventing PCO formation is a square edge on the posterior optic surface, exerting a mechanical barrier effect[8,9].

References
8 - Kohnen T, Maqdowski G, Koch DD. Scanning electron microscopic analysis of foldable acrylic and hydrogel intraocular lenses. J Cataract Refract Surg 1996; 22:1342-1350.
9- Werner L, Mamalis N, Pandey SK, et al. Posterior capsule opacification in rabbit eyes implanted with hydrophilic acrylic intraocular lenses with enhanced square edge. J Cataract Refract Surg 2004; 30:2403-2409.



MFM 611

BB MFM 611

| | |
|---|---|
| Material | Hydrophobic surface, acrylic with 25% water content, UV filter |
| Optic Size | 6.00 mm |
| Optic Design | Biconvex |
| Haptic Size | 11.00 mm |
| Haptic Design | Plate |
| Haptic Angle | 0˚ |
| Recommended Ac. A Constant | 118.0 |
| Recommended Op. A Constant | Srk-T : 118.3 - Srk-II : 118.5 |
| Diopter Power Range | From 0.0D to +32.00D (0.50D increments) |
| Special Production | From +32.50D to +45.00D (0.50D increments) |
| Refractive Index Wet | 20°C /35°C 1.462 / 1.462 ± 0.002 |
| Recommended Injector & Cartridge System | Acrijet Green 1.8 (Up to 25.0D)<br>Acrijet Green 2.0 (Up to 28.0D)<br>Acrijet Green 2.2 (Up to 30.0D) |

| | |
|---|---|
| Material | Hydrophobic surface, acrylic with 25% water content, UV, violet, and blue filter |
| Optic Size | 6.00 mm |
| Optic Design | Active-Diffractive Multifocal |
| Haptic Size | 11.00 mm |
| Haptic Design | Plate |
| Haptic Angle | 0˚ |
| Recommended Ac. A Constant | 118.0 |
| Recommended Op. A Constant | Srk-T:118.3 - Srk-II:118.5 |
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Acriva$^{UD}$ Reviol

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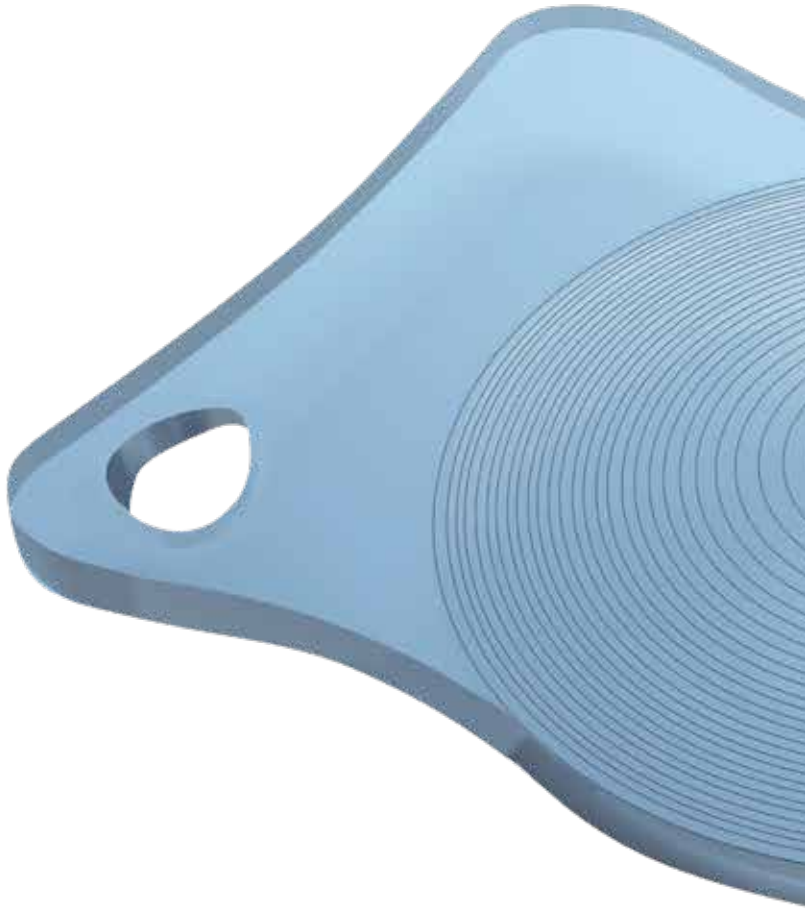

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